REMARKS

In view of the above amendments and the following remarks, reconsideration of the rejections contained in the Office Action of October 5, 2004 is respectfully requested.

The specification and abstract have now been reviewed and revised in order to make several editorial corrections, as indicated above. However, no new matter has been added by any of these changes. Therefore, the Examiner is respectfully requested to enter the above corrections to the specification.

In view of the Preliminary Amendment filed August 28, 2003, claims 4-10 and 14-20 were pending and examined in this application. In this regard, the Examiner rejected claims 4, 5, 10, 14, 15, 17, and 20 as being anticipated by the Yasui reference; and rejected claims 6-9, 16, 18, and 19 as being unpatentable over the Yasui reference in view of common knowledge in the art or engineering design choice. However, as indicated above, the original claims have now been cancelled and replaced with new claims 21-30, including new independent claims 21 and 26. All of the new claims are readable on the elected species of Figure 9. Furthermore, for the reasons discussed below, it is respectfully submitted that the new claims are clearly patentable over the prior art of record.

New independent claim 21 is directed to a tapered roller bearing that comprises an outer ring, an inner ring, a plurality of tapered rollers between the outer ring and the inner ring, and a retainer. The inner ring has a large rib surface having a conical surface for contacting large end faces of tapered rollers, and a *flank* smoothly connected to the conical surface and curving away from the large end faces of the tapered rollers.

A further description of the arrangement and advantages of the tapered roller bearing as recited in new independent claim 21 will now be provided with reference to Figure 9. However, reference to any portion of this application is provided only to aid in the Examiner's understanding of the differences between the present invention and the prior art, and is not intended to otherwise limit the scope of the claims.

As illustrated in Figure 9, the inner ring has a large rib surface 41 with a conical surface 41a for contacting large end faces 43 of the tapered rollers 42, and a flank 41b smoothly connected to the conical surface and curving away from the large end faces 43 of the tapered rollers 42. The large rib

surface 41 is shaped such that a *boundary* between the conical surface 41a and the flank 41b is located at an outer edge of a maximum contact oval 45 formed by the contact between the large end faces of the tapered rollers 42 and the conical surface 41a of the large rib surface 41 under a maximum permissible axial load of the tapered roller bearing, and is shaped such that a *wedge-shaped space* is defined between the flank 41b and the large end faces 43 of the tapered rollers 42 for smoothly drawing lubricating oil between the conical surface 41a and the large end faces 43 of the tapered rollers 42. As a result, as explained on page 30, paragraph [0105] of the specification, lubrication between the tapered rollers and the inner ring is improved so as to reduce torque loss and heat buildup due to sliding friction, thereby preventing seizure of the tapered roller bearing.

The Yasui reference discloses a tapered roller bearing, and the Examiner referred to Figure 4 of the Yasui reference as apparently illustrating all of the subject matter recited in original independent claims 4 and 14. As indicated above, however, new independent claim 21 has been drafted to clarify the shape of the large rib surface, and the Yasui reference does not disclose or suggest the recited shape of the large rib surface. In particular, although the Yasui reference appears to disclose an ordinary chamfer along an outer periphery of a large rib surface of an inner ring, the Yasui reference does not disclose or suggest that the large rib surface is shaped to have a *flank* so as to define a *wedge-shaped space* between the flank and the large end faces of tapered rollers. Moreover, the Yasui reference also does not disclose or suggest the *boundary* between the conical surface and the flank located as recited in new independent claim 21. Thus, it is submitted that the Yasui reference does not anticipate the invention recited in new independent claim 21. Furthermore, in view of the absence of any suggestion of a large rib surface shaped as recited in new independent claim 21, it is submitted that one of ordinary skill in the art would not even be motivated to modify the Yasui reference to obtain the invention recited in new independent claim 21. Accordingly, it is respectfully submitted that new independent claim 21 and the claims that depend therefrom are clearly patentable over the prior art of record.

New independent claim 26 is directed to a gear shaft support device for supporting a gear shaft in a vehicle, and comprises tapered roller bearings each including an outer ring, an inner ring, and a plurality of tapered rollers. The large rib surface of the inner ring of each of the tapered roller

bearings is shaped as discussed above with respect to new independent claim 21. Therefore, for the reasons discussed above with respect to new independent claim 21, it is respectfully submitted that new independent claim 26 is also clearly patentable over the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. However, if the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact the Applicant's undersigned representative.

Respectfully submitted,

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